AMENDED CLAIMS IN CLEAN FORM

Claims 1 to 3 (canceled)

4. (currently amended) The process according to Claim 23, wherein the control circuit is responsive to a back electromotive force of a driver of the sound transducer.

5. (currently amended) The process according to Claim 23, wherein the control circuit is responsive to an impedance of a driver of the sound transducer.

6. (currently amended) The process according to Claim 23, wherein the sound transducer comprises a coil and the control circuit is responsive to a back electromotive force of the coil.

7. (currently amended) The process according to Claim 23, wherein the sound transducer comprises a coil and the control circuit is responsive to an impedance of the coil.

8. (currently amended) The process according to Claim 23, wherein the control circuit is responsive to a motor factor of a driver of the sound transducer.

9. (currently amended) The process according to Claim 23, wherein sound transducer comprises a support and the control circuit is responsive to spring stiffness of the support.

10. (currently amended) The process according to Claim 23, wherein the sound transducer comprises a coil and the control circuit is responsive to a motor factor of the coil.

11. (currently amended) The process according to Claim 23, wherein the sound transducer comprises a diaphragm and the control circuit is responsive to spring stiffness of a support of the diaphragm.

12. (currently amended) The process according to Claim 23, wherein the sound transducer comprises a coil and diaphragm assembly.

Claims 13 to 22 (canceled)

23. (currently amended) A process for generating a signal to drive a sound transducer in an audio reproduction system, the process comprising:

receiving an audio signal at a first input of a control circuit, wherein the control circuit is configured according to a model of the sound transducer;

receiving a signal indicative of a state of the sound transducer at a second input of the control circuit, wherein the state is a relative position of a movable portion of the sound transducer with respect to another portion of the sound transducer; and

utilizing the control circuit to generate an output signal to drive the sound transducer, wherein the output signal is responsive to the signal indicative of a state of the sound transducer and the audio signal.

Claim 24 (canceled)

25. (currently amended) The process according to Claim 23 that comprises generating the signal indicative of state using an electrical characteristic of the system.

26. (currently amended) The process according to Claim 25, wherein the sound transducer comprises a coil and the electrical characteristic is an impedance of the coil.

27. (currently amended) The process according to Claim 25, wherein the sound transducer comprises a coil and the electrical characteristic is a capacitance of the coil with respect to a structure of the sound transducer.

28. (currently amended) The process according to Claim 23, wherein the signal indicative of state is generated optically.

29. (currently amended) The process according to Claim 28, wherein the signal indicative of state is generated using light directed from an infrared light source to the movable portion of the sound transducer.

30. (currently amended) The process according to Claim 29, wherein the infrared light source is an infrared light emitting diode.

Claim 31 (canceled)

32. (currently amended) The process according to Claim 23, wherein the movable portion of the sound transducer is a diaphragm.

33. (currently amended) The process according to Claim 32 that comprises generating the signal indicative of state using an electrical characteristic of the system.

34. (currently amended) The process according to Claim 33, wherein the sound transducer comprises a coil and the electrical characteristic is an impedance of the coil.

35. (currently amended) The process according to Claim 33, wherein the sound transducer comprises a coil and the electrical characteristic is a capacitance of the coil with respect to a structure of the sound transducer.

36. (currently amended) The process according to Claim 32, wherein the process comprises generating the signal indicative of state optically in response to the relative position of the diaphragm.

37. (currently amended) The process according to Claim 36, wherein the signal indicative of state is generated using light directed from an infrared light source toward a portion of the diaphragm.

38. (currently amended) The process according to Claim 37, wherein the infrared light source is an infrared light emitting diode.

39. (currently amended) The process according to Claim 23, wherein the sound transducer comprises a coil and a diaphragm, and wherein the coil is the movable portion of the sound transducer and the model comprises an operational parameter of the sound transducer as a function of the relative position of the coil with respect to another portion of the sound transducer.

40. (original) The process according to Claim 39, wherein the operational parameter is an impedance of the coil.

41. (currently amended) The process of Claim 39, wherein the operational parameter is a motor factor of a driver of the sound transducer.

42. (currently amended) The process of Claim 39, wherein the sound transducer comprises a support coupled to the diaphragm, and wherein the operational parameter is spring stiffness of the support.

Claims 43 to 46 (canceled)

47. (currently amended) The process according to Claim 23, wherein the audio reproduction system comprises a signal conditioning portion and a sound conditioning portion, and wherein the model comprises a representation of the sound conditioning portion of the audio reproduction system.

48. (currently amended) The process according to Claim 23, wherein the audio reproduction system comprises a signal conditioning portion and a sound conditioning portion, and wherein the model comprises a representation of the signal conditioning portion of the audio reproduction system.

49. (currently amended) The process according to Claim 23, wherein utilizing the control circuit to generate an output signal comprises compensating for a back electromotive force of a driver of the sound transducer.

50. (currently amended) The process according to Claim 23, wherein utilizing the control circuit to generate an output signal comprises compensating for an impedance of a driver of the sound transducer.